


FORM PTO-1390 (REV 10-94)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY'S DOCKET NUMBER 879.154USWO
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371			U.S. APPLICATION NO. (If known, see 37 C.F.R. 1.5) UNKNOWN 09/787981
INTERNATIONAL APPLICATION NO. PCT/DE99/02708	INTERNATIONAL FILING DATE 24-AUGUST-1999	PRIORITY DATE CLAIMED 22-SEPTEMBER-1998	
TITLE OF INVENTION DEVICE FOR PRODUCING PLASTIC PIPES			
APPLICANT(S) FOR DO/EO/US ULRICH, HERBERT; WERNER, JOACHIM			
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:			
<ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371. 2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371. 3. <input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(I). 4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date. 5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) <ol style="list-style-type: none"> a. <input checked="" type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau). b. <input checked="" type="checkbox"/> has been transmitted by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US). 6. <input checked="" type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)). 7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) <ol style="list-style-type: none"> a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau). b. <input type="checkbox"/> have been transmitted by the International Bureau. c. <input checked="" type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input type="checkbox"/> have not been made and will not be made. 8. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). 9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)). 10. <input checked="" type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)). 			
Items 11. to 16. below concern document(s) or information included:			
11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98., FORM 1449, 9 REFERENCES.			
12. <input checked="" type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.			
13. <input checked="" type="checkbox"/> A FIRST preliminary amendment. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.			
14. <input type="checkbox"/> A substitute specification.			
15. <input type="checkbox"/> A change of power of attorney and/or address letter.			
16. <input checked="" type="checkbox"/> Other items or information: International Search Report, PCT/IB/306			

U.S. APPLICATION NO (If known, see 37 C.F.R. 1.5) UNKNOWN		INTERNATIONAL APPLICATION NO 24-AUGUST-1999		ATTORNEY'S DOCKET NUMBER 879.154USWO	
17. [X] The following fees are submitted:				CALCULATIONS PTO USE ONLY	
BASIC NATIONAL FEE (37 CFR 1.492(a) (1)-(5)): Search Report has been prepared by the EPO or JPO.....\$860.00 International preliminary examination fee paid to USPTO (37 CFR 1.492(a)(1)).....\$690.00 No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)).....\$710.00 Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(3)) paid to USPTO \$1000.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4).....\$100.00					
ENTER APPROPRIATE BASIC FEE AMOUNT =				\$860.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than [] 20 [] 30 months from the earliest claimed priority date (37 CFR 1.492(c)).				\$0	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	6 -20 = 0		X \$18.00	\$0	
Independent claims	2 -3 = 0		X \$80.00	\$0	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$260.00	\$0	
TOTAL OF ABOVE CALCULATIONS =				\$860.00	
Reduction by 1/2 for filing by small entity, if applicable. Small entity status is claimed pursuant to 37 CFR 1.27				\$430.00	
SUBTOTAL =				\$430.00	
Processing fee of \$130.00 for furnishing the English translation later than [] 20 [] 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				+ \$0	
TOTAL NATIONAL FEE =				\$430.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				+ \$40.00	
TOTAL FEES ENCLOSED =				\$470.00	
				Amount to be:	
				refunded	\$0
				charged	\$0
a. [X] Check(s) in the amount of \$430.00 and \$40.00 to cover the above fees is enclosed. b. [] Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed. c. [X] The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 13-2725.					
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO: John J. Gresens MERCHANT & GOULD P.O. Box 2903 Minneapolis, MN 55402-0903					
				SIGNATURE:	
				NAME:	John J. Gresens
				REGISTRATION NUMBER:	33,112

09/787981

S/N unknown

JCO8 Rec'd PCT/PTO

PATENT
22 MAR 2001

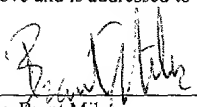
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Ulrich, et al.	Docket No.:	879.154USWO
Serial No.:	unknown	Filed:	concurrent herewith
Int'l Appln No.:	PCTDE9902708	Int'l Filing Date:	August 24, 1999
Title:	DEVICE FOR PRODUCING PLASTIC PIPES		

CERTIFICATE UNDER 37 CFR 1.10

'Express Mail' mailing label number: EL658338513US
Date of Deposit: March 22, 2001

I hereby certify that this paper or fee is being deposited with the United States Postal Service 'Express Mail Post Office To Addressee' service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: 
Name: Brant Miles

PRELIMINARY AMENDMENT

Box PCT
Assistant Commissioner for Patents
Washington, D. C. 20231

Dear Sir:

In connection with the above-identified application filed herewith, please enter the following preliminary amendment:

IN THE ABSTRACT

Insert the attached Abstract page into the application as the last page thereof.

IN THE SPECIFICATION

A courtesy copy of the present specification is enclosed herewith. However, the World Intellectual Property Office (WIPO) copy should be relied upon if it is already in the U.S. Patent Office.

REMARKS

A new abstract page is supplied to conform to that appearing on the publication page of the WIPO application, but the new Abstract is typed on a separate page as required by U.S. practice.

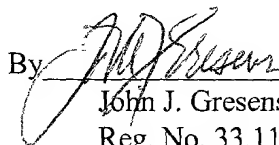
Applicants respectfully request that the preliminary amendment described herein be entered into the record prior to calculation of the filing fee and prior to examination and consideration of the above-identified application.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicants' primary attorney-of record, John J. Gresens (Reg. No. 33,112), at (612) 371.5265.

Respectfully submitted,

MERCHANT & GOULD P.C.
Post Office Box 2903
Minneapolis, Minnesota 55402-0903
(612) 371-5265

Dated: March 22, 2001

By 
John J. Gresens
Reg. No. 33,112

JJG/rw

09/787981

JCO8 Rec'd PCT/PTO 22 MAR 2001

ABSTRACT
PCTDE99/02708

DEVICE FOR PRODUCING PLASTIC PIPES

The invention relates to a device for producing plastic pipes (10), comprising an extruder, a pipe head that can be connected to the extruder in the direction ;of production and a calibrating station (3), whereby the dimension of the pipe can be adjusted inside the calibrating station (3) during the production phase.

CERTIFICATE UNDER 37 CFR 1.10

'Express Mail' mailing label number: EL658338513US

Date of Deposit: March 22, 2001

I hereby certify that this paper or fee is being deposited with the United States Postal Service 'Express Mail Post Office To Addressee' service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: 

Name: Brant Miles

4/PR15

09/787981

JCO8 Rec'd PCT/PTO 22 MAR 2001

DEVICE FOR PRODUCING PLASTIC PIPES

The invention relates to a device for producing plastic pipes according to the precharacterizing clause of the main claim.

In equipment that produces plastic pipes, there exists the problem that pipes of different outside diameters must be produced with, at the same time, different wall thicknesses. In the prior art in this regard it is necessary that, corresponding to the outside diameter of the pipe and to the desired wall thickness (usually normalized in dependence on the outside diameter) of the pipe, appropriate tools be interchanged. This causes a stopping of the machine, a high labor expense for the exchanging of the tools, and a loss of plastic material, until the new pipe can be again drawn. An appropriate drawing of the pipe that allows the production of a pipe of less wall thickness, with an existing outside diameter, is for this reason impossible, since the molecular chain of the plastic material is stretched and also orientated in such a manner that thereby the strength of the pipe is negatively influenced, and the formation of shrinkings and foldings is fostered.

Known from the class-forming DE 24 12 818 is a device for calibrating a pipe of thermoplastic plastic material emerging from an extruder press; in this known arrangement, viewed in the production direction of the pipe, calibrating lamellae are arranged in sequence. Each calibrating lamella displays a calibrating passage, which for all the sequential calibrating lamellae is alike and unchangeable. Each calibrating lamella works together with a lamellae segment that can be lifted off upwardly, which during the startup phase of the production can be lifted off, so that the placing of the pipe leaving the extruder or the pipe head into the calibrating passage is facilitated. A variation of the pipe diameter during the production process is not possible here and is not suggested.

From DE 35 21 321 has become known the method of making provision in a calibrating station for metal bellows, which through stretching or compressing can be varied in their inner diameter. Through this means, the changing outside diameter occurring upon the cooling down and contraction of the plastic material should be matched, in order to thereby make possible even during the cooling phase and the possibly decreasing outside diameter of the pipe, a good introduction of the pipe into the calibrating station.

Finally, from WO 95/27601 has become known the method, in a non-generic production process for plastic pipes, of making provision, in the interior of the pipe to be formed, for shaping tools that are formed through individual rollers; in this arrangement, through a greater or lesser widening of

the circumferential circle conditioned by the shaping tools, the pipe diameter can be changed. However, here the pipe is to be formed through a plate that is wound around this shaping tool, the end edges of the plates being welded to each other. Special pressure rollers act upon the weld seam produced in the joining of the two plates in such a manner that from outside inward this weld seam is to be no longer recognizable.

The object of the invention is to create a device in order to achieve during the production phase of the pipe, without interruption of the production process, a fully automatically controlled resetting between several plastic pipe dimensions in the continuous extrusion process, the outside diameter and the pipe wall thickness being adjusted according to customer desires or to standardization, as the case may be.

This object of the invention is attained through the teaching of the main claim.

Advantageous configurations are explained in the dependent claims.

The possibly already pre-dimensioned mass extrusion can, according to the invention, enter into a calibrating station, in which different pipe dimensions can be set. To be sure, known from WO 96/36 457 is the method of carrying out minor calibration adjustments in a calibrating station by the fact that through a wedging effect, individual open calibrating rings can be slightly changed in their diameter. With such an arrangement, however, a variation of the pipe outside dimension is not achievable, but rather it is merely counteracted by the contraction behavior.

The calibrating station designed according to the invention is preferably formed through a multiplicity of lamellae, which are arranged so as to be spaced apart on the outside of the pipe to be calibrated, over the circumference of the latter, forming in each case a ring of lamellae. In this, seen in the production direction of the pipe is arranged inside the calibrating station a multiplicity of such lamella rings, the individual lamellae of the individual lamella rings being situated at the gaps with respect to each other, so that a problem-free adjustment of the individual lamellae of the individual ring with respect to the lamellae of the following ring or of the preceding ring is possible.

The adjustment of the lamellae takes place via a motor or by hand; through hand control, all of the lamella rings can be adjusted at the same time.

The rounding of the lamellae, with which the latter rests against the outside of the pipes, can correspond to the largest pipe diameter to be passed. If smaller diameters are passed, then the

treated pipe is not ideally round, but rather is composed of smaller, adjoining roundings, which are then equalized inside the calibration bath.

Instead of the above-described lamellae, provision can also be made for adjusting segments, which produce, viewed in the longitudinal direction of the pipe, pipe-shaped bodies, the individual segment strips forming these bodies engaging each other in a meshing manner, so that even in the case of adjustments to a larger diameter, still always regions of these segments rest on the pipe.

It is also possible to design the calibrating tools as rollers that rest on the outer side of the pipe, which rollers, controlled through springs or levers, define a pipe outer circumference that corresponds to the desired pipe dimension.

In the following, an example of embodiment of the invention is described with the aid of the drawings. They show:

Fig. 1: an overall view of a production device

Fig. 2: seen in the production direction, a section through a calibrating head

Fig. 3: in the section according to line 3 – 3 in Fig. 2, the sequentially arranged lamella rings

Fig. 4: a modified example of embodiment

Recognizable in Fig.1 is an adjustable pipe head, which, seen in the production direction, adjoins an extruder (not represented in the drawing). Connected to the adjustable pipe head 1 is a vacuum suction lock 2, which is equipped with a vacuum suction connection 5, in which provision is made for measuring devices that, depending on the desired pipe outside diameter, set the vacuum prevailing in the suction lock, so that thereby the pipe-shaped stream of molten material is adjusted to the desired outside diameter, i.e. is sucked up; in this, a pre-cooling of the molten extrusion can already take place in the vacuum suction lock 2. In the vacuum suction lock 2, in conjunction with the adjustable pipe head an exact pipe wall thickness can be set; the pipe wall thickness can be varied depending on the outside diameter of the pipe.

Connected to the vacuum suction lock 2 is a calibrating station 3. Here, through a mechanical central adjustment, takes place the exact calibration of the outside diameter of the extrusion of

molten material and of the already partially-hardened pipe, this calibration being applicable to all plastics that come into consideration. In this calibration station, several dimensions can be adjusted even with the different wall thicknesses.

In a vacuum calibrating bath 4 connected with this, seen in the production direction, the cooling down and hardening of the plastic pipe then takes place through water spray, a water feed 6 and a water outlet 7 being recognizable in the drawing. Further, joined to the vacuum calibrating bath 4 is a vacuum connection 8, and the pipe 10 located in the vacuum calibrating bath 4 passes over support rollers 11, which can also be called the calibrating rollers and can be set to the desired pipe diameter. The surface of the pipe 10 is relatively hard, and the pipe 10 leaves the vacuum calibrating bath 4 through a vacuum seal 9, which either adjusts automatically to the pipe diameter or is adjusted depending on the pipe dimensions set in the calibrating station 3 and/or in the vacuum calibrating bath 4. In the vacuum seal 9 can be arranged formed rollers, which are actuated hydraulically or through mechanical springs; here, at the same time, water for lubrication and sealing can be introduced into the path of the pipe.

Figs. 2 and 3 show sections through an embodiment form of the calibrating station 3. It can be seen that inside the outer wall 44 of the calibrating station are arranged a number of lamellae 40, which, distributed over the circumference of the pipe 10, rest against the outside wall of the pipe 10. The contacting edge 41 of each lamella 40 displays here a rounding, which corresponds to the largest possible outside diameter of the pipe 10. It is recognizable from Figs. 2 and 3 that a multiplicity of lamella rings 42 and 43 are arranged sequentially, as viewed in the production direction of the pipe. In the case of the representation in Fig. 3, forty-five lamella rings are arranged, and according to Fig. 2 each lamella ring 42 or 43 is formed by six lamellae 40; however, the invention is in no way limited to this.

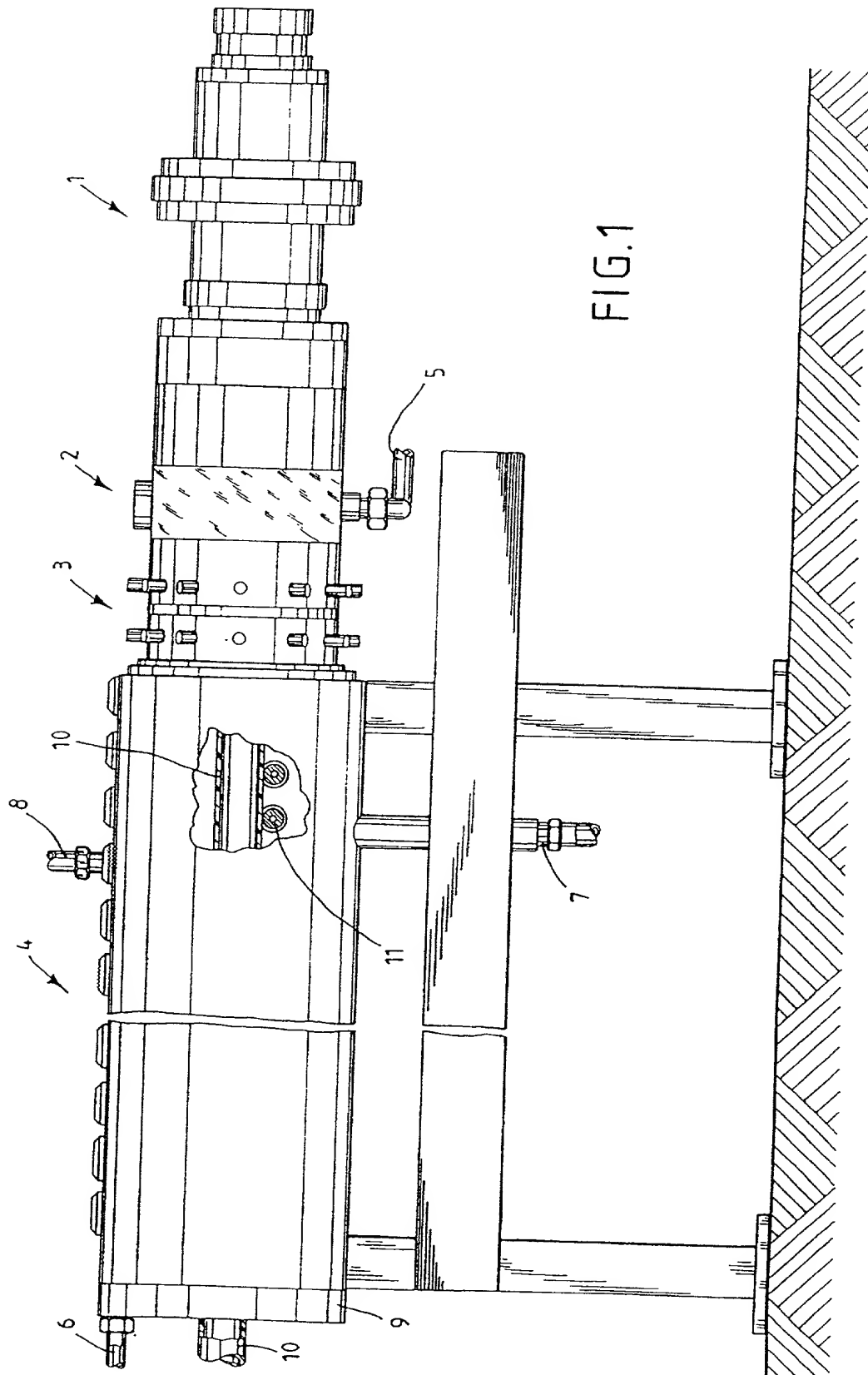
In the embodiment form according to Fig. 2, provision is made for adjusting motors 45, which, controlled in common, effect a common adjustment of all of the lamella rings; here, the adjustment of the adjusting motors 45 can take place in a centrally controlled manner with the corresponding control in the suction group 2 and the calibrating bath 4.

Fig. 4 shows an embodiment form in which a number of individual rollers 50 rest on the outside wall of the pipe to be produced, the rollers being borne by levers 51, which are movable by means of positioning devices, so that thereby the desired inside diameter of the circle of rollers can be set. The positioning devices 52 and the levers 51 are arranged on a positioning wheel 53, which can be moved in a circular manner by means of a motorized device.

Patent Claims:

1. Device for producing plastic pipes with an extruder, a pipe head (1) connected in the direction of production, and a calibrating station (3), which displays calibrating tools (40) that make contact with the outside wall of the pipe (10), characterized by the fact that as calibrating tools a multiplicity of lamellae (40) are arranged so as to be distributed, spaced apart from each other, over the circumference of the pipe (10) to be calibrated; also, seen in the production direction of the pipe (10), provision is made for a number of such lamella rings (42, 43), whose lamellae (40) in each case are arranged in the gaps between the lamellae (40) of the preceding lamella ring.
2. Device according to claim 1, characterized by the fact that the adjustment of the lamellae (40) takes place by motorized means.
3. Device according to claim 1, characterized by the fact that the adjustment of the lamellae (40) takes place manually.
4. Device according to claim 1, characterized by the fact that the lamellae are formed as adjusting segments that, seen in the longitudinal direction of the pipe, create ring-shaped bodies, the individual segment strips forming these bodies interlocking in a meshing manner.
5. Device according to the precharacterizing clause of claim 1, characterized by the fact that the calibrating tools are formed as rollers, which make contact with the outer side of the pipe, and the theoretical diameter formed by the rollers is adjustable.
6. Device for producing plastic pipes with an extruder, a pipe head (1) connected to the extruder in the direction of production, and a calibrating station (3), in which calibrating tools make contact with the outside wall of the pipe (10), characterized by the fact that during the production phase the mass-gap of the pipe head (1) is adjustable and connected to the outlet of the pipe head (1) is a vacuum suction lock (2) that acts upon the outside of the not-yet-hardened pipe (10), through which vacuum suction lock the mass-extrusion diameter is changed in a controlled manner; furthermore, in the calibrating station (3) connected to the vacuum suction lock (2) different pipe diameters can be set during the production phase and provision is made for a vacuum calibrating bath (4) connected to the calibrating station (3), in which bath the pipe (10) is cooled and

$$\begin{array}{ccccccc} g^{01} & g^{02} & g^{03} & g^{04} & g^{05} & g^{06} & g^{07} \\ g^{10} & g^{11} & g^{12} & g^{13} & g^{14} & g^{15} & g^{16} \\ g^{20} & g^{21} & g^{22} & g^{23} & g^{24} & g^{25} & g^{26} \\ g^{30} & g^{31} & g^{32} & g^{33} & g^{34} & g^{35} & g^{36} \\ g^{40} & g^{41} & g^{42} & g^{43} & g^{44} & g^{45} & g^{46} \\ g^{50} & g^{51} & g^{52} & g^{53} & g^{54} & g^{55} & g^{56} \\ g^{60} & g^{61} & g^{62} & g^{63} & g^{64} & g^{65} & g^{66} \\ g^{70} & g^{71} & g^{72} & g^{73} & g^{74} & g^{75} & g^{76} \end{array} \quad \begin{array}{ccccccc} g^{08} & g^{09} & g^{17} & g^{18} & g^{19} & g^{27} & g^{28} \\ g^{80} & g^{81} & g^{82} & g^{83} & g^{84} & g^{85} & g^{86} \\ g^{90} & g^{91} & g^{92} & g^{93} & g^{94} & g^{95} & g^{96} \\ g^{17} & g^{18} & g^{19} & g^{27} & g^{28} & g^{29} & g^{37} \\ g^{18} & g^{19} & g^{27} & g^{28} & g^{29} & g^{37} & g^{38} \\ g^{19} & g^{27} & g^{28} & g^{29} & g^{37} & g^{38} & g^{39} \\ g^{27} & g^{28} & g^{29} & g^{37} & g^{38} & g^{39} & g^{47} \\ g^{28} & g^{29} & g^{37} & g^{38} & g^{39} & g^{47} & g^{48} \\ g^{29} & g^{37} & g^{38} & g^{39} & g^{47} & g^{48} & g^{49} \\ g^{37} & g^{38} & g^{39} & g^{47} & g^{48} & g^{49} & g^{57} \\ g^{38} & g^{39} & g^{47} & g^{48} & g^{49} & g^{57} & g^{58} \\ g^{39} & g^{47} & g^{48} & g^{49} & g^{57} & g^{58} & g^{59} \\ g^{47} & g^{48} & g^{49} & g^{57} & g^{58} & g^{59} & g^{67} \\ g^{48} & g^{49} & g^{57} & g^{58} & g^{59} & g^{67} & g^{68} \\ g^{49} & g^{57} & g^{58} & g^{59} & g^{67} & g^{68} & g^{69} \\ g^{57} & g^{58} & g^{59} & g^{67} & g^{68} & g^{69} & g^{77} \\ g^{58} & g^{59} & g^{67} & g^{68} & g^{69} & g^{77} & g^{78} \\ g^{59} & g^{67} & g^{68} & g^{69} & g^{77} & g^{78} & g^{79} \end{array}$$



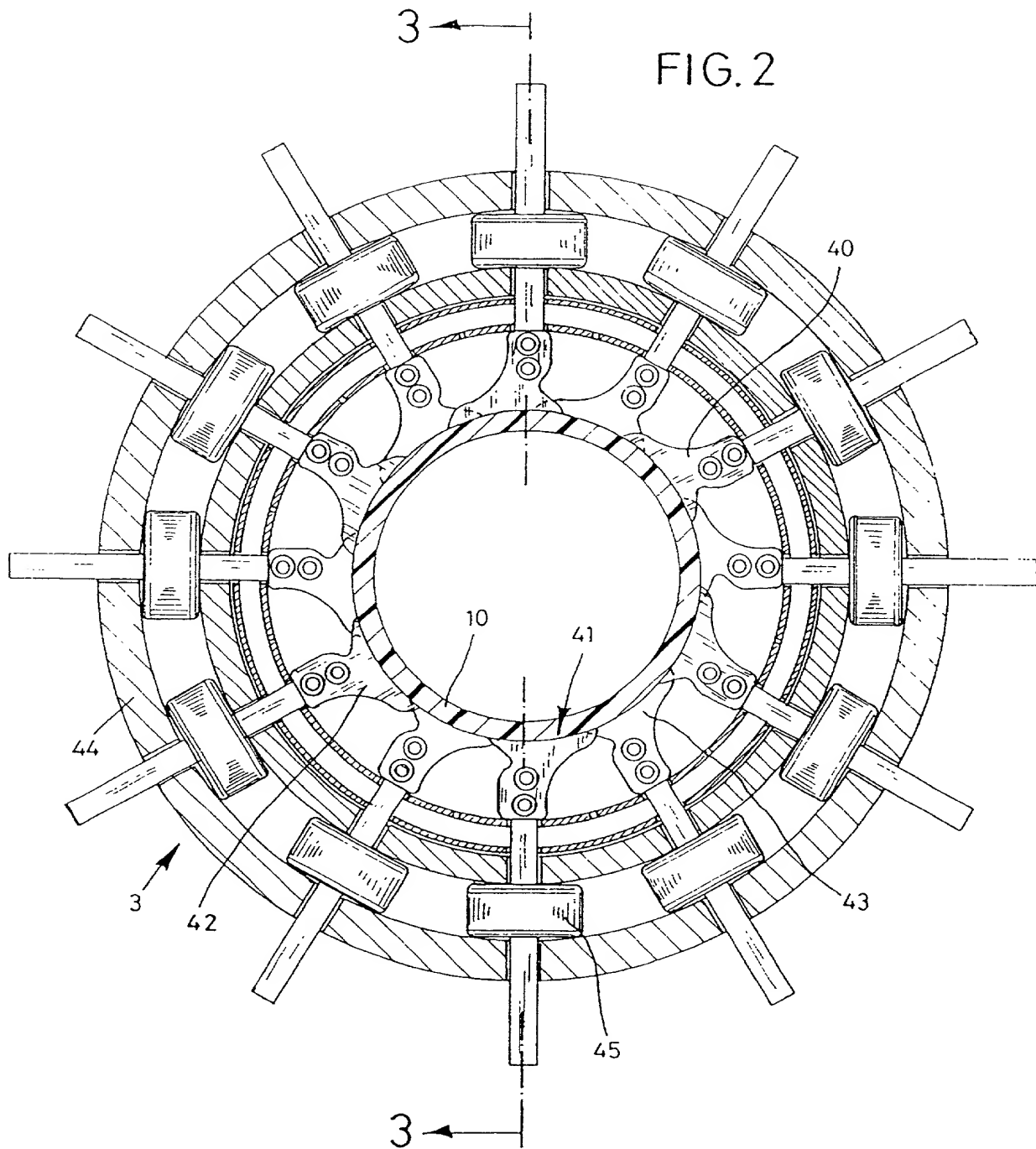


FIG. 3

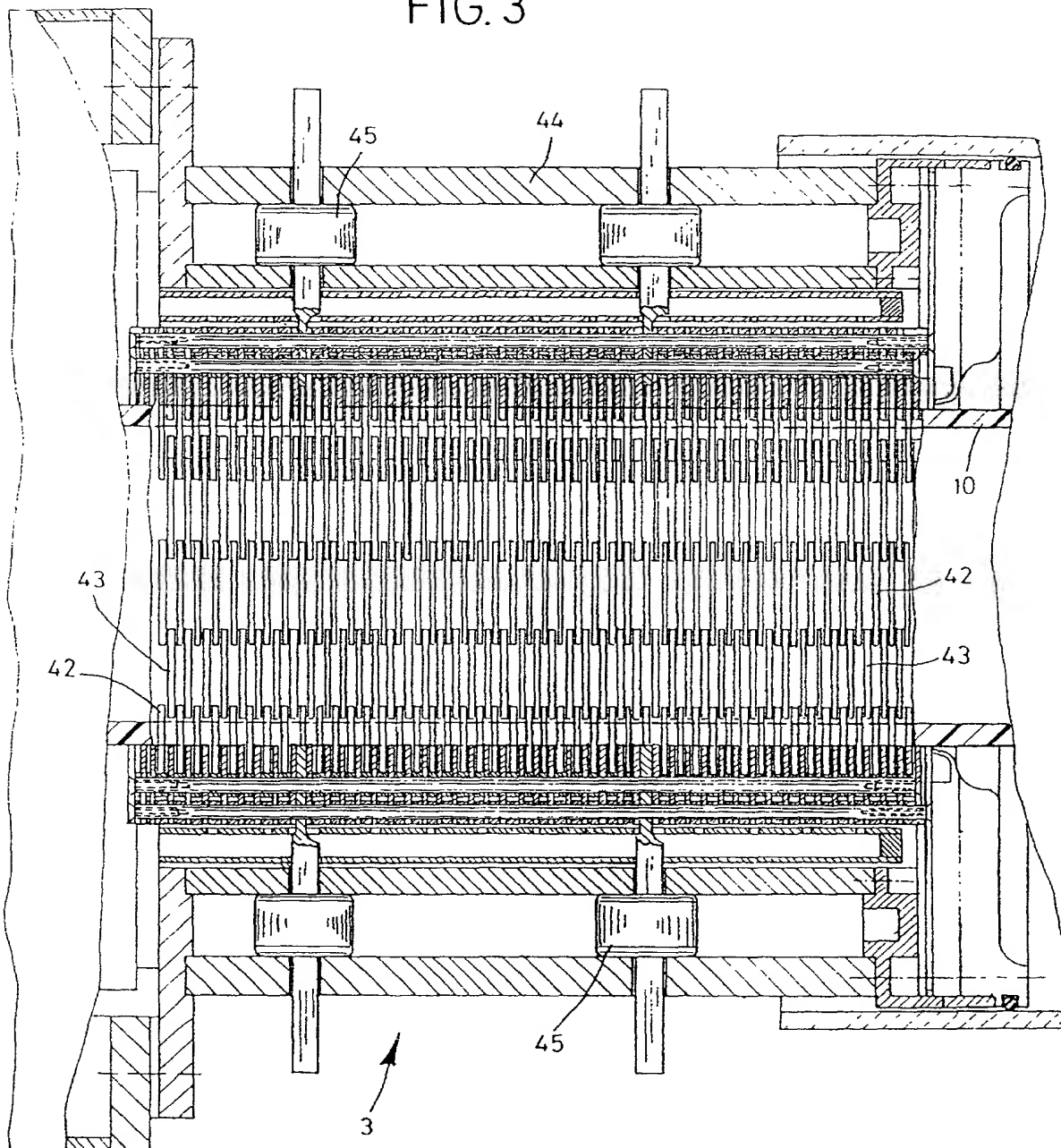
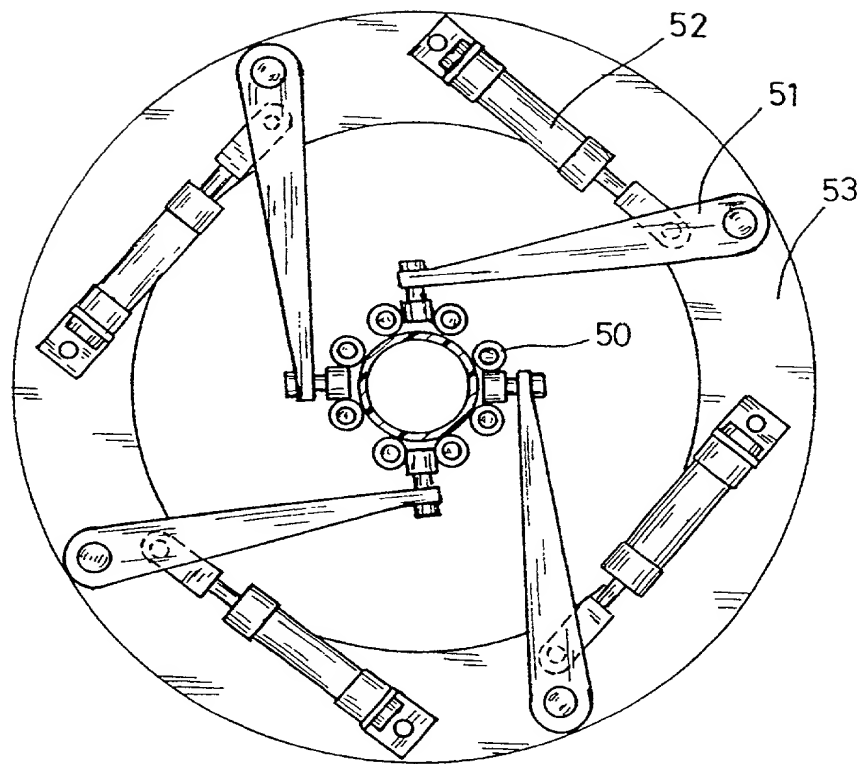


FIG. 4



Attorney Docket No. 879.154USWO

MERCHANT & GOULD P.C.
United States Patent Application

COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am the original, first and sole inventor (if only one name is listed below) or a joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: **DEVICE FOR PRODUCING PLASTIC PIPES**

The specification of which

☒ is attached hereto☒ was filed on

as application serial no.

and was amended on (if applicable) (in the case of a PCT-filed

application) described and claimed in international no. PCTDE9902708 filed August 24, 1999 and as amended on

(if any),

which I have reviewed and for which I solicit a United States patent.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I hereby claim foreign priority benefits under Title 35, United States Code, § 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

☐ no such applications have been filed.☒ such applications have been filed as follows:

FOREIGN APPLICATION(S), IF ANY, CLAIMING PRIORITY UNDER 35 USC § 119

COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)
GERMANY	198 43 340.9	22-SEPTEMBER-1998	

ALL FOREIGN APPLICATION(S), IF ANY, FILED BEFORE THE PRIORITY APPLICATION(S)

COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)

I hereby claim the benefit under Title 35, United States Code, § 120/365 of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national PCT international filing date of this application.

U.S. APPLICATION NUMBER	DATE OF FILING (day, month, year)	STATUS (patented, pending, abandoned)

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below:

U.S. PROVISIONAL APPLICATION NUMBER	DATE OF FILING (Day, Month, Year)

I acknowledge the duty to disclose information that is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56 (reprinted below):

§ 1.56 Duty to disclose information material to patentability.

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

(1) prior art cited in search reports of a foreign patent office in a counterpart application, and

(2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

(1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim;

(2) It refutes, or is inconsistent with, a position the applicant takes in:

(i) Opposing an argument of unpatentability relied on by the Office, or

(ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

(1) Each inventor named in the application;

(2) Each attorney or agent who prepares or prosecutes the application; and

(3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.

(e) In any continuation-in-part application, the duty under this section includes the duty to disclose to the Office all information known to the person to be material to patentability, as defined in paragraph (b) of this section, which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby appoint the following attorney(s) and/or patent agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith:

Albrecht, John W.	Reg. No. 40,481	Leonard, Christopher J.	Reg. No. 41,940
Ali, M. Jeffer	Reg. No. 46,359	Liepa, Mara E.	Reg. No. 40,066
Anderson, Gregg I.	Reg. No. 28,828	Lindquist, Timothy A.	Reg. No. 40,701
Batzli, Brian H.	Reg. No. 32,960	Lycke, Lawrence E.	Reg. No. 38,540
Beard, John L.	Reg. No. 27,612	Mayfield, Denise L.	Reg. No. 33,732
Berns, John M.	Reg. No. 43,496	McDonald, Daniel W.	Reg. No. 32,044
Black, Bruce E.	Reg. No. 41,622	McIntyre, Jr., William F.	Reg. No. 44,921
Branch, John W.	Reg. No. 41,633	Mitchem, M. Todd	Reg. No. 40,731
Bremer, Dennis C.	Reg. No. 40,528	Mueller, Douglas P.	Reg. No. 30,300
Bruess, Steven C.	Reg. No. 34,130	Nichols, A. Shane	Reg. No. 43,836
Byrne, Linda M.	Reg. No. 32,404	Parsons, Nancy J.	Reg. No. 40,364
Campbell, Keith	Reg. No. 46,597	Pauly, Daniel M.	Reg. No. 40,123
Carlson, Alan G.	Reg. No. 25,959	Phillips, Bryan K.	Reg. No. 46,990
Caspers, Philip P.	Reg. No. 33,227	Phillips, John B.	Reg. No. 37,206
Chiapetta, James R.	Reg. No. 39,634	Prendergast, Paul	Reg. No. 46,068
Clifford, John A.	Reg. No. 30,247	Pytel, Melissa J.	Reg. No. 41,512
Coldren, Richard J.	Reg. No. 44,084	Qualey, Terry	Reg. No. 25,148
Daignault, Ronald A.	Reg. No. 25,968	Reich, John C.	Reg. No. 37,703
Daley, Dennis R.	Reg. No. 34,994	Reiland, Earl D.	Reg. No. 25,767
Dalglish, Leslie E.	Reg. No. 40,579	Roberts, Fred	Reg. No. 34,707
Daulton, Julie R.	Reg. No. 36,414	Samuels, Lisa A.	Reg. No. 43,080
DeVries Smith, Katherine M.	Reg. No. 42,157	Schmaltz, David G.	Reg. No. 39,828
DiPietro, Mark J.	Reg. No. 28,707	Schuman, Mark D.	Reg. No. 31,197
Edell, Robert T.	Reg. No. 20,187	Schumann, Michael D.	Reg. No. 30,422
Epp Ryan, Sandra	Reg. No. 39,667	Scull, Timothy B.	Reg. No. 42,137
Glance, Robert J.	Reg. No. 40,620	Sebald, Gregory A.	Reg. No. 33,280
Goggin, Matthew J.	Reg. No. 44,125	Skoog, Mark T.	Reg. No. 40,178
Golla, Charles E.	Reg. No. 26,896	Spellman, Steven J.	Reg. No. 45,124
Gorman, Alan G.	Reg. No. 38,472	Stoll-DeBell, Kirstin L.	Reg. No. 43,164
Gould, John D.	Reg. No. 18,223	Sumner, John P.	Reg. No. 29,114
Gregson, Richard	Reg. No. 41,804	Swenson, Erik G.	Reg. No. 45,147
Gresens, John J.	Reg. No. 33,112	Tellekson, David K.	Reg. No. 32,314
Hammer, Samuel A.	Reg. No. 46,754	Trembath, Jon R.	Reg. No. 38,344
Hamre, Curtis B.	Reg. No. 29,165	Tuchman, Ido	Reg. No. 45,924
Harrison, Kevin C.	Reg. No. 46,759	Tunheim, Marcia A.	Reg. No. 42,189
Hertzberg, Brett A.	Reg. No. 42,660	Underhill, Albert L.	Reg. No. 27,403
Hillson, Randall A.	Reg. No. 31,838	Vandenburgh, J. Derek	Reg. No. 32,179
Holzer, Jr., Richard J.	Reg. No. 42,668	Wahl, John R.	Reg. No. 33,044
Johnston, Scott W.	Reg. No. 39,721	Weaver, Karrie G.	Reg. No. 43,245
Kadievitch, Natalie D.	Reg. No. 34,196	Welter, Paul A.	Reg. No. 20,890
Karjeker, Shaikat	Reg. No. 34,049	Whipps, Brian	Reg. No. 43,261
Kettelberger, Denise	Reg. No. 33,924	Whitaker, John E.	Reg. No. 42,222
Keys, Jeramie J.	Reg. No. 42,724	Wickhem, J. Scot	Reg. No. 41,376
Knearl, Homer L.	Reg. No. 21,197	Williams, Douglas J.	Reg. No. 27,054
Kowalchuk, Alan W.	Reg. No. 31,535	Withers, James D.	Reg. No. 40,376
Kowalchuk, Katherine M.	Reg. No. 36,848	Witt, Jonelle	Reg. No. 41,980
Lacy, Paul E.	Reg. No. 38,946	Wu, Tong	Reg. No. 43,361
Larson, James A.	Reg. No. 40,443	Xu, Min S.	Reg. No. 39,536
Leon, Andrew J.	Reg. No. 46,869	Zeuli, Anthony R.	Reg. No. 45,255

I hereby authorize them to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/ organization who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct Merchant & Gould P.C. to the contrary.

Please direct all correspondence in this case to Merchant & Gould P.C. at the address indicated below:

Merchant & Gould P.C.
P.O. Box 2903
Minneapolis, MN 55402-0903



I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

2	Full Name Of Inventor	Family Name <u>ULRICH</u>	First Given Name <u>Herbert</u>	Second Given Name
0	Residence & Citizenship	City <u>Emsdetten</u> DEX	State or Foreign Country GERMANY	Country of Citizenship GERMANY
1	Mailing Address	Address <u>Nordwalder Strasse 104</u>	City Emsdetten	State & Zip Code/Country D-48282/GERMANY
Signature of Inventor 201:			Date:	
2	Full Name Of Inventor	Family Name <u>WERNER</u>	First Given Name <u>Joachim</u>	Second Given Name
0	Residence & Citizenship	City <u>Hamminkeln</u> DEX	State or Foreign Country GERMANY	Country of Citizenship GERMANY
2	Mailing Address	Address <u>Berkenhögge 1 Dingden</u>	City Hamminkeln	State & Zip Code/Country D-46499/GERMANY
Signature of Inventor 202:			Date: <u>15/02/2001</u>	

WERNER

ULRICH